

REMARKS

I. STATUS OF THE CLAIMS

Claims 1-20 are currently pending.

II. REJECTION OF CLAIMS UNDER 35 USC 112, FIRST PARAGRAPH, AND OBJECTION UNDER 35 USC 132 AS INCLUDING NEW MATTER

Claim 1 includes the phrase "a collimated beam including a plurality of different wavelengths and having a non-uniform intensity distribution". The other independent claims include a similar phrase. The Examiner asserts that the application does not provide "positive" and "explicit" support for this phrase.

However, it is respectfully submitted that there is no requirement that "positive" and "explicit" support be provided. If the Examiner maintains the objection, it is respectfully requested that the Examiner indicate a section of 35 USC, 37 CFR or the MPEP that indicates a requirement for "positive" and "explicit" support.

The applicants concede that the specification does not use the exact wording of a "non-uniform" intensity distribution. However, as indicated above, it is respectfully submitted that it is not required for the specification to provide such exact wording.

Instead, as indicated in MPEP 2163 I(B), "newly added claim limitations must be supported in the specification through express, *implicit*, or *inherent* disclosure." (emphasis added). Moreover, as indicated in MPEP 2163 II(A)(2), "the examiner should review the claims and the entire specification, including the ... figures ...to understand how the applicant provides support for the various features of the claimed invention." Further, as indicated in MPEP 2163 II(A)(3), "an applicant may show possession of an invention by disclosure or drawings ... that are sufficiently detailed to show that the applicant was in possession of the claimed invention as a whole". MPEP 2163 II(A)(3) cites the following language from various cases: "drawings alone may provide a 'written description' of an invention as required by Sec. 112"; "the drawings of applicant's specification provided sufficient written descriptive support for the claim limitation at issue"; "in those instances where a visual representation can flesh out words, drawings may be used in the same manner and with the same limitations as the specification".

With respect to the above-noted portions of the MPEP, please note that FIG. 2A of the present application shows the distribution of light intensity 110A of a collimated beam 110a. In the specific example shown in FIG. 2A, the distribution of light intensity 110A is highest at the center of the collimated beam 110a. See, for example, page 5, lines 24-25; and page 6, lines 10-11, of the specification.

Clearly, a person of ordinary skill in the art would understand that the distribution of light intensity 110A as shown in FIG. 2A is an example of a "non-uniform" intensity distribution.

The American Heritage College Dictionary, Third Edition, defines "uniform" as "always the same, as in character or degree; unvarying". Clearly, the distribution of light intensity 110A as shown in FIG. 2A is not uniform.

Therefore, it is respectfully submitted that FIG. 2A, page 5, lines 24-25, in addition to the disclosure on page 6, line 24, through page 7, line 21, of the specification, clearly provides support for the recited phrase.

* * *

Claim 1 also includes the phrase "intensity of the collimated beam incident on the diffraction unit varies as the diffraction unit is moved". Other independent claims include a similar phrase. The Examiner asserts that the application does not provide support for this phrase.

The applicants concede that the specification does not use this exact wording. However, as indicated above, it is respectfully submitted that it is not required for the specification to provide such exact wording.

As disclosed, for example, in FIG. 1, an optical filter 104 is provided in the path of collimated beam 110a. See also, for example, in FIGS. 1, 2A and 2B, and the disclosure on page 5, lines 24-25, and page 6, line 24, through page 7, line 21, of the specification. Therefore, clearly, the intensity of collimated beam 110a is incident on optical filter 104.

As disclosed, for example, in FIGS. 1, 2A and 2B, and the disclosure on page 5, lines 24-25, and page 6, line 24, through page 7, line 21, of the specification, the intensity of collimated beam 110 incident on optical filter 104 will vary as optical filter 104 is moved. See especially page 7, lines 3-21, of the specification.

Therefore, it is respectfully submitted that the application clearly provides support for the recited phrase.

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In view of the above, it is respectfully requested that the objection be withdrawn.

III. REJECTION OF CLAIMS UNDER 35 USC, 112, SECOND PARAGRAPH

The Examiner asserts that "it is not clear what is the structural relationship between the light source and the variable filter". Further, the Examiner asserts "it is not clear how could the light source and the property of a light source is part of the filter." Further, the Examiner asserts that "the light source and the property of the light is only an INTENDED application of the

variable filter". As a result, the Examiner asserts that "the feature concerning the light source and its property is therefore being examined as an intended use of the variable filter".

It is respectfully submitted that this rejection is not understood by the applicant. More specifically, the claims do not recite a "light source". Therefore, it is respectfully submitted that it is not required to recite any structural relationship between a light source and any other cited elements. Moreover, since a light source is not being recited, it is respectfully submitted that it is not required to recite how a light source and/or a property of a light source is related to other recited elements.

Please note that, as an example, claim 1 recites a filter that is arranged in a path of a collimated beam including a plurality of different wavelengths and having a non-uniform intensity distribution. This is not an "intended use". It is a specific recitation of specific positioning of a filter with respect to a collimated beam. Accordingly, it is respectfully submitted that the Examiner should fully consider this specific recitation.

In view of the above, it is respectfully requested that the rejection be withdrawn.

IV. REJECTION OF CLAIMS 1-5, 7-9 AND 11-20 UNDER 35 USC 103 AS BEING UNPATENTABLE OVER FUKUSHIMA (US PATENT NO. 5,805,759)

Claim 1 recites a filter that is arranged in a path of a collimated beam including a plurality of different wavelengths and having a non-uniform intensity distribution.

Claim 1 recites the filter having a diffraction unit that is movable in a direction substantially perpendicular to a direction of the collimated beam, wherein the filter has first and second filter portions with the diffraction unit between the first and second filter portions, and the collimated beam hits the first and second filter portions and the diffraction unit so that intensity of the collimated beam incident on the diffraction unit varies as the diffraction unit is moved and the filter thereby provides a transmittance versus wavelength characteristic in which transmittance of the filter changes with wavelength.

Claim 1 also recites a moving unit that moves the diffraction unit to thereby change the transmittance versus wavelength characteristic of the filter.

See, for example, FIGS. 2A and 2B, and the disclosure on page 5, lines 24-25, and page 6, line 24, through page 7, line 21, of the specification.

The transmission slit 42 in FIGS. 7(C) and 7(D) of Fukushima does not operate in the same manner as the diffraction unit recited in claim 1. More specifically, in Fukushima, a spectral beam is a beam in which wavelength components are separated spatially in a direction of thickness of the spectral beam. See, for example, column 5, lines 13-17, of Fukushima. As

shown, for example, in FIG. 4 of Fukushima, diffraction gratings 20 and 22 are used to create a spectral beam in which wavelength components are separated spatially in a direction of thickness of the spectral beam.

The filter, such as attenuator plate 6D in FIG. 7(C) of Fukushima, is displaced with respect to the spatially separated wavelength components. In other words, in Fukushima, *the wavelength of the beam to be filtered varies* as the attenuator plate 6D is moved, thereby achieving a variable wavelength characteristic.

Moreover, as indicated in column 9, lines 35-43, of Fukushima, the transmittance on portions of attenuator plate 6D other than the transmission slit 42 have 0% transmittance. Therefore, *the transmission slit 42 only functions as a window that transmits 100% (in principle) of the spectral beam.*

From the above description of Fukushima, it can be seen that Fukushima does NOT provide a collimated beam including a plurality of different wavelengths and having a non-uniform intensity distribution, and that that intensity of the collimated beam incident on the diffraction unit varies as the diffraction unit is moved and the filter thereby provides a transmittance versus wavelength characteristic in which transmittance of the filter changes with wavelength.

On page 5, second paragraph, of the outstanding Office action, the Examiner appears to indicate that various recitations are an "intended use", and are not being considered by the Examiner. However, as indicated in the remarks for the rejections under 35 USC 112, it is respectfully submitted that the claims do not recite an "intended use", and all the recitations should be considered.

Further, claim 1 is amended to recite a filter that is arranged in a path of a "wavelength division multiplexed" collimated beam including a plurality of different wavelengths "multiplexed together and which are not separated into respective wavelengths" and having a non-uniform intensity distribution. Similar amendments are made to the other independent claims. It would be understood from the application that the collimated beam is a "wavelength division multiplexed" beam. See, for example, page 1, line 13, through page 2, line 18; page 11, line 25, through page 12, line 1; page 13, lines 15-18, of the specification. Further, as can be seen from, for example, FIG. 1, there are no diffraction gratings or other elements between fiber 101 and filter 104 to separate the individual wavelengths in the collimated light. Therefore, it is clear that the multiplexed wavelengths are not separated in the collimated beam.

This operation in the amended claim 1 is significantly different than in Fukushima, in which a beam is separated into respective wavelength components by diffraction gratings 20

and 22 before interacting with attenuator plate 6. See, for example, column 5, lines 13-17, of Fukushima.

The above comments are specifically directed to claim 1. However, it is respectfully submitted that the comments are helpful in understanding differences of the other claims over Fukushima.

* * *

Claim 17 recites that the first and second filter portions each have a same, non-zero transmittance versus wavelength characteristic over wavelengths in the collimated light. See also claims 18-20. See, for example, FIG. 2, and the disclosure on page 6, lines 3-5; page 6, lines 22-23; and column 18, lines 12-17, of the present application.

FIG. 7(C) of Fukushima discloses an attenuator plate 6D. The transmittance versus wavelength characteristics of attenuator plate 6D are shown in FIG. 7(D) of Fukushima. As can be seen in FIG. 7(D) of Fukushima, the portions adjacent to slit 42 have zero transmittance for wavelengths in the light. Therefore, the attenuator plate 6D in Fukushima is significantly different that that recited, for example, in claims 17-20.

In the Office Action, the Examiner rejects claims 17-20 by referring to FIGS. 7(A) and 7(B) of Fukushima. However, it is respectfully submitted that these figures are substantially opposite to what is recited in claims 17-20.

More specifically, FIG. 7(A) of Fukushima shows a blocking stripe 40 in the center of attenuator plate 6c. Therefore, in essence, the blocking stripe 40 is positioned between two transparent areas. This is substantially opposite that recited, for example, in claim 17 (which is dependent from claim 1), where the diffraction unit is *between* the first and second filter portions.

Please note that claim 20 is dependent from claim 13, which specifically recites a slit between the first and second film portions. The arrangement in FIGS. 7(A) and 7(B) of Fukushima is substantially opposite the recitation in claim 20.

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In view of the above, it is respectfully submitted that the rejection is overcome.

V. REJECTION OF CLAIM 10 UNDER 35 USC 103 AS BEING UNPATENTABLE OVER FUKUSHIMA IN VIEW OF MATSUNO

The above comments for distinguishing over Fukushima also apply here, where appropriate.

In view of the above, it is respectfully submitted that the rejection is overcome.

VI. REJECTION OF CLAIMS 1-6 AND 10-14 UNDER 35 USC 103 AS BEING UNPATENTABLE OVER LUO (US 2004/0005115)

Claim 1 recites the filter having a diffraction unit that is movable in a direction substantially perpendicular to a direction of the collimated beam, wherein the filter has first and second filter portions with the diffraction unit between the first and second filter portions, and the collimated beam hits the first and second filter portions and the diffraction unit so that intensity of the collimated beam incident on the diffraction unit varies as the diffraction unit is moved and the filter thereby provides a transmittance versus wavelength characteristic in which transmittance of the filter changes with wavelength.

See, for example, FIGS. 1 and 2, and the corresponding disclosure on page 5, line 3, through page 7, line 21, of the specification.

Luo discloses bandpass filters with a space in between. For example, FIG. 3 of Luo discloses bandpass filters 380 and 390 with a space in between. However, light does not hit the space. For example, in FIG. 3 of Luo, the arrow from lens 430(f) refers to the light passing through lens 430(f). It can be seen in FIG. 3 of Luo that this light only hits and reflects off the various bandpass filters, and does not pass through the spaces between the bandpass filters. See also the various other arrows, representing other lights, in FIG. 3 of Luo.

This operation is significantly different than that recited, for example, in claim 1, where the collimated beam hits the first and second filter portions *and the diffraction unit* so that intensity of the collimated beam incident on the diffraction unit varies as the diffraction unit is moved and the filter thereby provides a transmittance versus wavelength characteristic in which transmittance of the filter changes with wavelength.

Moreover, claim 1 recites a moving unit that moves the diffraction unit to thereby change the transmittance versus wavelength characteristic of the filter. Luo does not disclose or suggest this feature.

In the Office Action, the Examiner concedes that Luo does not explicitly teach a moving unit. However, the Examiner asserts that it would be obvious to modify Luo to include a moving unit. The Applicants respectfully disagree.

More specifically, FIG. 3 of Luo discloses an add/drop multiplexer into which a plurality of lights are input and a plurality of lights are output. The add/drop multiplexer must remain stable, or the entire alignment of the various lights/filters/lenses will be disturbed and the device will not work properly. For example, FIG. 3 of Luo discloses a large, single optical block 310 onto which all the bandpass filters are adhesively coupled or deposited. See, for example, paragraph [0022] of Luo. Therefore, to move a single filter, the entire block 310 would have to be moved,

which would undesirably change the alignment of all the other lights/filters/lenses. For example, to change the transmittance of bandpass filter 380, the entire block 310 would have to be moved, which would undesirably change the alignment of all the other lights/filters/lenses. Such movement would destroy the operation of the device in Luo.

Therefore, it is respectfully submitted that the overall operation and nature of the device in Luo is substantially different than that recited, for example, in claim 1.

On page 9, first paragraph, of the outstanding Office action, the Examiner appears to indicate that various recitations are an "intended use", and are not being considered by the Examiner. However, as indicated in the remarks for the rejections under 35 USC 112, it is respectfully submitted that the claims do not recite an "intended use", and all the recitations should be considered.

Further, claim 1 is amended to recite a filter that is arranged in a path of a "wavelength division multiplexed" collimated beam including a plurality of different wavelengths "multiplexed together and which are not separated into respective wavelengths" and having a non-uniform intensity distribution. Similar amendments are made to the other independent claims. It would be understood from the application that the collimated beam is a "wavelength division multiplexed" beam. See, for example, page 1, line 13, through page 2, line 18; page 11, line 25, through page 12, line 1; page 13, lines 15-18, of the specification. Further, as can be seen from, for example, FIG. 1, there are no diffraction gratings or other elements between fiber 101 and filter 104 to separate the individual wavelengths in the collimated light. Therefore, it is clear that the multiplexed wavelengths are not separated in the collimated beam. It is respectfully submitted that these amendments further distinguish over Luo.

The above comments are specifically directed to claim 1. However, it is respectfully submitted that the comments would be helpful in understanding differences of various other claims over the cited reference.

In view of the above, it is respectfully submitted that the rejection is overcome.

VII. CONCLUSION

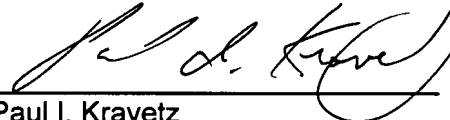
In view of the above, it is respectfully submitted that the application is in condition for allowance, and a Notice of Allowance is earnestly solicited.

If any further fees are required in connection with the filing of this response, please charge such fees to our Deposit Account No. 19-3935.

Respectfully submitted,

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